



## Department of Toxic Substances Control

8800 Cal Center Drive  
Sacramento, California 95826-3200



Arnold Schwarzenegger  
Governor

Alan C. Lloyd, Ph.D.  
Agency Secretary  
Cal/EPA

August 24, 2005

Mr. Jim McAlister  
United States Army Corps of Engineers  
Sacramento District  
1325 J Street  
Sacramento, California 95814-2922

REVIEW OF FINAL REPORT FOR THE INVESTIGATION OF METHANE AND VOLATILE ORGANIC COMPOUNDS (VOCS) AT LANDFILL 26 AND HAMILTON MEADOWS (REPORT), FORMER HAMILTON ARMY AIRFIELD, NOVATO, CALIFORNIA, DATED SEPTEMBER 2004, AND DRAFT FINAL REPORT LANDFILL 26 CORRECTIVE ACTION INVESTIGATION WORK PLAN, HAMILTON ARMY AIRFIELD, NOVATO, CALIFORNIA

Dear Mr. McAlister:

The Department of Toxic Substances Control (DTSC) coordinated its review of the subject documents with the California Regional Water Quality Control Board (RWQCB) and the California Integrated Waste Management Board (CIWMB), collectively the "State."

This letter constitutes concurrence with the RWQCB letter of July 18, 2005, and the CIWMB letter of July 25, 2005, (see attached letters) for the Draft Final Corrective Action Workplan prepared to complete task 1 of the RWQCB Cleanup and Abatement Orders 01-140 and 01-129 dated December 7, 2001.

The Landfill Report for the Investigation of Methane and VOCs was prepared to document the Army's investigation of the southern portion of the landfill and the adjacent residential area, Hamilton Meadows, after methane gases were detected at greater than the regulatory threshold of five percent by volume in an Army gas monitoring probe. The State commented on the draft report and concluded that the Army did not need to perform any further investigation for the southern and southeastern areas of the landfill at that time. However, the State reserves the right to address any appropriate environment or human health issues should new information regarding the landfill become available in the future.

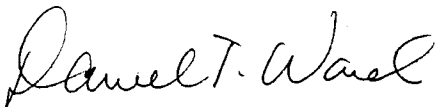
Mr. Jim McAlister  
August 24, 2005  
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In addition, the Army performed risk assessment monitoring for VOCs and it appears there is no significant threat posed by VOCs. The Army installed a landfill gas migration control trench (Vent Trench) to prevent landfill gases from migrating offsite, which appears to be effective in reducing landfill gas migration along the eastern portion of the landfill. However, elevated methane tends to persist on Lot 30 of Hamilton Meadows, located south of the landfill. Consequently, Shea Homes has worked with Marin County Local Enforcement Agency to install safety measures in some of the new residential construction to mitigate potential explosive methane gas buildup. We do recommend that the Army include the results of Shea Homes' gas monitoring into its forthcoming analysis and reports.

The State will work closely with the Army to determine the next steps in the investigation, remediation and monitoring of the entire landfill. We expect that a Correction Action /Remedial Action Plan will be completed that documents the final remedy for the landfill.

We look forward to our continued work with the Army on Landfill 26. If you have any questions, please contact me at 916-255-3676, or Theresa McGarry, project manager, at (916) 255-3664.

Sincerely,



Mr. Daniel T. Ward, P.E.  
Chief  
Base Closure Unit  
Office of Military Facilities

Attachments

cc: Ms. Laura Herse  
Shea Homes  
227 North 1<sup>st</sup> Street, Suite B  
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Mr. Jim Davies  
Davies Associates  
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Mr. Jim McAlister  
August 24, 2005  
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cc: Mr. Mark Janosky, R.E.H.S.  
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Ms. Cynthia Barnard  
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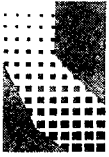
Mr. Gino Yekta  
California Integrated Waste Management Board  
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Mr. Michael Wochnick, P.E.  
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Mr. Laurent Meillier, R.G.  
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Mr. Stewart Black  
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Ms. Theresa McGarry  
Office of Military Facilities  
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# California Integrated Waste Management Board



Alan C. Lloyd, Ph.D.  
Secretary for  
Environmental  
Protection

Rosario Marin, Chair  
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Arnold Schwarzenegger  
Governor

July 25, 2005

Mr. James McAlister  
Department of the Army  
U.S. Army Engineering District, Sacramento  
Corps of Engineers  
1325 J Street  
Sacramento, California 95814-2922

## **DRAFT FINAL REPORT, LANDFILL 26 CORRECTIVE INVESTIGATION WORK PLAN, HAMILTON ARMY AIRFIELD, NOVATO, MARIN COUNTY, FACILITY NO. 21-AA-0049**

Dear Mr. McAlister:

On June 6, 2005, California Integrated Waste Management Board (Board) Closure and Technical Services staff received the *Draft Final Report, Landfill 26 Corrective Investigation Work Plan, Hamilton Army Airfield, Novato, California*, dated May 2005 (hereinafter referred to as "Plan").

Board staff has reviewed the Plan and provides the following comments.

1. Board staff does not have any objection to the implementation of the Plan.
2. Section 6.2.2: This section contains recommendations for soil gas monitoring. The U.S. Army Corps of Engineers (ASACE) will need to develop a soil gas monitoring plan that includes both the existing gas monitoring protocol and any proposed additions and/or modifications including proposed implementation of Plan recommendations. The most appropriate submittal of a revised soil gas monitoring plan would be as a revision to the Postclosure Maintenance Plan. Board staff acceptance of the Plan and review of the gas monitoring protocol is/will be based on the current proposed land use surrounding the landfill. Should the land use change, reconsideration of the gas monitoring system will be necessary.
3. Board staff is deferring review of soil gas monitoring protocols for potential impacts to water quality to the San Francisco Bay Regional Water Quality Control Board.

Should you have any questions or comments concerning the above matter, please contact Mr. Gino Yekta of my staff or me at (916) 341-6354 or (916) 341-6318, respectively.

Sincerely,

Michael B. Wochnick, Manager  
Closure and Technical Services

cc: Ms. Theresa McGarry, Department of Toxic Substances Control  
Mr. Laurent Meillier, San Francisco Bay Regional Water Quality Control Board  
Mr. Mark Janofsky, Marin County Solid Waste Local Enforcement Agency

California Environmental Protection Agency

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# California Regional Water Quality Control Board

## San Francisco Bay Region



Ian C. Lloyd Ph.D.  
Secretary for  
Environmental  
Protection

1515 Clay Street, Suite 1400, Oakland, California 94612  
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Arnold Schwarzenegger  
Governor

Date: **JUL 18 2005**  
File No.: 2159.5008 (LM)

US Army USACE of Engineers  
Attn: Mr. James McAlister  
USACE Project Manager  
Sacramento District  
1325 J Street  
Sacramento, CA 95814-2922

**Subject: Comments on the Draft Final Report Landfill 26 Corrective Action Investigation Work Plan, Hamilton Army Airfield, Novato, CA.**

Dear Mr. McAlister:

The San Francisco Bay Regional Water Quality Control Board (Water Board) staff has reviewed the CH2MHILL report entitled: "*Landfill 26 Corrective Action Investigation Work Plan Hamilton Army Airfield*", Novato, CA. The CH2MHILL report is dated May 2005 and was received on May 31, 2005. Water Board staff has the following crucial comments on the document. Additionally, Attachment A was included to outline technical deficiencies the USACE needs to consider in their final edition of the report.

- The USACE needs to compare the detections made in soil gas and groundwater at the monitoring points against Environmental Screening Levels (ESLs page: <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>) with the applicable land use scenario and exposure pathway. Please consult Water Board correspondence<sup>1</sup> dated May 12, 2004 with a similar comment.
- This document reports geological and hydrogeological sampling activities redacted by a private consultant. The USACE needs to submit a signed copy of the report by a registered professional in the Geological Sciences. Please consult section 7835 p 9 of the Geologist and Geophysicist Act: [http://www.geology.ca.gov/laws\\_regs/act.pdf](http://www.geology.ca.gov/laws_regs/act.pdf) to comply with this requirement.

<sup>1</sup> Comments on the Draft Final Landfill 26 Monitoring Program October/ November 2003 Report, Hamilton Army Airfield, Novato, CA.



Mr. James McAlister

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- Please statistically analyze the variability of the contaminants found in the matrices of interest by performing a time series analysis.
- Please state that the 1995 San Francisco Bay Basin Plan is an Applicable Relevant and Appropriate requirement at the site. More specifically, provide the beneficial uses of groundwater as outlined in this plan.

If you have any questions, please contact me at 510-622-2440 or by e-mail at [Lmeillier@waterboards.ca.gov](mailto:Lmeillier@waterboards.ca.gov).

Sincerely,

*Laurent Maurice Meillier*

Laurent M. Meillier. PG.  
Engineering Geologist  
San Francisco Bay Regional Water Quality Control Board

JUL 2 2005



Mr. James McAlister

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**CC:**

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Mr. James McAlister

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US Army USACE of Engineers  
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**Attachment A****A. Technical Deficiencies**

- **Section 2.1.1, Site Description, p 2-1:**
  - ➔ Clarify the statement “LF 26 and its buffer lie within this planning area, but the landfill and buffer lands will remain government property.” The Army’s inclusion of Government owned Landfill 26 and adjacent buffer into the private reuse plan is confusing. It seems to include private development with an area under Government ownership. Please clarify this statement.
  - ➔ Map the areas within and outside of the reuse plan including Federal, State, County and City properties.
  - ➔ Cite the source of the data to the following statement: “Data indicate that the LFG (Landfill Gas) control trench operates effectively.”
- **Figure 2.1, Study Areas in 1990’s near LF 26:**
  - ➔ Please improve the quality of the figure. The background gray areas are not readable.
- **Section 2.1.1, Site History, p 2-3:**
  - ➔ Indicate how the total volume of solid wastes disposed at the site was calculated.
  - ➔ We wish to note for the record that the groundwater extraction and treatment system were dismantled without approval from either the Water Board or DTSC.
- **Section 2.2.3, Previous and Current Monitoring Activities, p 2-6:**
  - ➔ The USACE acknowledges “many of these GMP (Gas Monitoring Probes) are regularly flooded and at time cannot be monitored.” It is obvious that the probes were not placed or designed properly. Please clarify if the USACE will repair these probes to restore their usability.
  - ➔ Indicate in the report that the closure plan has not yet been approved by the regulatory agencies.
  - ➔ Provide the list of chemicals analyzed during the surface water sampling. Indicate if surface samples were taken outside of the seeps.
- **Section 3.1.1, Previous Investigations, p 3-2:**
  - ➔ **p. 3-2:** Indicate the possible sources of hydrocarbon contamination at the site.
  - ➔ Tabulate all significant detections above applicable criteria. Please show the average and ranges of detections for the respective constituents within groundwater in and around the vicinity of Landfill 26.
  - ➔ **p. 3-2:** State if the two compounds detected in laboratory and field blank samples were also detected in landfill leachate.
  - ➔ **p. 3-2:** Explain the basis for eliminating sample detections in less than 10 % of the analyses performed. Water Board staff recommends instead filtering the data based on meeting the environmental screening levels.
  - ➔ **p. 3-3:** The USACE reports MtBE contamination in monitoring wells PZ-09 and MW92-38. As we mentioned earlier please cooperate with the Navy in reporting these results and coordinate your sampling efforts to better reflect the MTBE impact at the site.



impact to Landfill 26 and adjacent property as the contaminants appear to originate from Ammo Hill a USACE property.

- **Section 4.1.2, General Groundwater Quality and Metals, p 4-5:**

- The USACE indicates “that sample filtration is not effective in removing colloids.” The USACE needs to correct this deficiency.
- The USACE needs to compare the metals concentrations detected in groundwater downgradient of the site to the 1995 Water Quality objectives for toxic pollutants in surface water (Tables 3-3 and 3-4).
- Please provide isoconcentration maps for metals impacts in groundwater as detected in the deep groundwater zone.

- **Section 4.5.1, Conclusions, p 4-12:**

- Identify the wells where the metals associated with landfill refuse were detected. Show within a table the range and average detections made for the respective metals detected.

- **Section 4.5.2, Recommendations, p 4-13:**

- Water Board staff recommends sampling metals for both total and dissolved (filtered) concentrations to define the influence of colloids on groundwater impacts at the site.
- Identify the specific range of the compounds the USACE is planning to sample for the “limited range of VOCs, SVOC, dissolved metals”.

- **Section 5.0, Soil Gas Evaluation, p 5-1:**

- Water Board staff is concerned by the statement that “groundwater elevations are above the RCRA-type-cap material at the landfill perimeter throughout most of the year.” Title 27, Article 3, Section 20240 2(c) states that “existing landfills, waste piles, and surface impoundments shall be operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water.” State how high groundwater is not impairing the resiliency of the cover to isolate leachate from the surrounding environment.

- **Section 5.1.1, Fixed and Natural Gasses, p 5-2:**

- Please explain the basis for only considering methane, CO<sub>2</sub>, O<sub>2</sub> and N<sub>2</sub> in the assessment of the adequacy of the monitoring network and frequency. VOCs may have been used to complement this study.
- Please compare the detections against applicable regulatory criteria.
- Graphically outline the areas where the detections were made with associated concentrations.

- **Section 5.7.2, Recommendations, p 5-8:**

- Clarify that “TO-15” VOCs are analyzed with the EPA analytical method of the same name.